108 PROSECUTION AND PROGRESS

108.01 Subletting of Contract

All subcontracts and Subcontractors (regardless of the subcontracting tier) must be approved by the Department. This approval is needed before a Subcontractor mobilizes and begins any work on a project.

The Assistant State Engineer through ADOT's Field Reports Section approves and disapproves all Subcontractors. Copies of any subcontracts should be sent to the Field Reports Section for review.

ADOT has broadened the definition of *Subcontractor*. The second paragraph of Subsection 108.01 of the Standard Specifications defines precisely who is considered part of the "Contractor's own organization". Everyone else is considered a Subcontractor, including those who provide services to a construction site such as barricade companies, cleanup and sanitation services, surveyors, material testing firms, and some trucking firms. All are counted toward the subcontracted work, which cannot exceed 60% in the 1996, 2000 and 2008 Standard Specifications, and 50% in the 1990 Standard Specifications. The intent is that everyone who works on the site for the Contractor is either part of the Contractor's organization or is a Subcontractor.

Material Suppliers have to be careful how they deliver materials to the project, or they can be considered Subcontractors as well. Material Suppliers can deliver and stockpile materials at the project site. However, they should not be allowed to set their materials in place either manually or by machine. For example, a commercial asphalt plant that supplies asphaltic paving materials cannot run the laydown machine. Their trucks can load the machine, and independent truckers can work for the Material Supplier, but either the Contractor or Subcontractor must place and compact the material.

Companies that supply temporary concrete barriers and other traffic control devices cannot set these materials in their final place without being an approved Subcontractor. However, these companies can perform basic maintenance on their materials. They can pick up these materials from a storage area away from or adjacent to the work area. They cannot remove their materials from the roadway or directly from a work area.

For subcontract requirements, refer to Chapter 12 of this manual.

108.02 Start of Work

When the State Transportation Board awards a construction contract, a Notice-of-Award Letter is sent to the Contractor by ADOT's Contracts and Specifications Section. The Field Office must obtain a copy of this letter so it can accurately track project time.

Special Provisions may require the Contractor to "quick start" the project within 10 calendar days of the Notice of Award Letter. See subsections 103.08, 103.09, and 108.02 of the Special Provisions for "quick start" requirements.

108.03 Preconstruction Conference

Although most of the important contract issues are raised and discussed during the partnering conference, a preconstruction conference is still needed to:

1. allow the Contractor to submit the documents required before construction can begin; and

2. give outsiders, such as utility companies, local community leaders, business owners, and others who may not have attended the partnering conference the opportunity to hear about and discuss the project.

Contract Submittals

The following is a list of documents that the Contractor must submit at the preconstruction conference according to the Standard Specifications:

Document	**Subsections**
Project Schedule	108.03
Authorized Signature Form	108.03
List of Proposed Subcontractors and Material Suppliers	108.03
Traffic Control Plan(s)	108.03
Designated Traffic Control Coordinator	701-3.01, 108.03
Safety Plan	107.08, 108.03
Designated Safety Supervisor	108.03
List of Items of Special Manufacture	106.02
List of Items in Short Supply	106.02
Table of Hourly Wage Rates and Fringe Benefit Rates	109.04(D)(1)(a)
List of Materials and Equipment for Trees, Shrubs, and Plants	806-3.01
List of Materials and Equipment for Water Distribution Work	808-3.01
List of Materials and Equipment for Sewage System Work	809-3.01
Traffic Signal and Highway Lighting Materials List	730-4
Erosion Control Measures (for projects without a SWPPP)	104.09, 108.03
Designated Quality Control Manager (for projects in which 106.04 is applicable)	106.04(C)(1)
Additional Submittals for Federal Aid Projects	
DBE Subcontracts, Invoices, and Purchase Orders	108.01, 108.03
List of Trainees and Training Schedule	108.03
Designated DBE Program Representative	DBE Provisions
Designated EEO Officer	FHWA 1273
Disclosure Form to Report Lobbying (if applicable)	Form LLL
Optional Submittals	
Proposed Subcontractors and Material Suppliers	—
EEO/AA Policy and Statements	—
List of Supervisory Personnel and Emergency Contacts	—

The project Special Provisions may have additional submittal requirements. The Resident Engineer should review the Special Provisions and inform the Contractor of any additional requirements. Documents required after the preconstruction conference include:

- a temporary drainage plan (104.10); and
- a letter securing all the plant material for the project (806-2.01).

It is important for the Contractor to submit all of the required documents at the preconstruction conference. These documents are a direct reflection of how prepared the Contractor is to begin the work. Missing or unfinished documents, such as an incomplete schedule or an off-the-shelf safety plan, demonstrate that the Contractor has not put enough effort into preparing for the contract work. Although this is not enough to stop the Contractor from beginning work on the project, it is enough to withhold mobilization payments (see Subsection 901-5).

The intent of withholding the mobilization payment is to encourage the Contractor to demonstrate that some basic preparation has been done in the areas of scheduling, traffic control, safety, and federal aid requirements before the Department pays for any of the Contractor's start-up costs. Usually, telling the Contractor ahead of time that all mobilization payments will be withheld until complete preconstruction documents are received is enough to get prompt compliance.

Conducting the Conference

The preconstruction conference may be combined into the last 30 minutes of the partnering conference as long as the preconstruction conference is still documented. It is not necessary to invite everyone who attended the partnering conference to the preconstruction conference. However, the Resident Engineer should consider inviting:

- the District Engineer;
- all key Inspectors and Project Supervisors;
- the Design Engineers;
- the Project Manager;
- the Contractor's project management staff;
- all key Subcontractors;
- major Material Suppliers;
- utility company representatives (gas, water, cable, sewage, telephone, power, irrigation);
- local government officials (city, county, tribal);
- local business owners and neighborhood leaders;
- federal representative such as the Forest Service, Park Service, the BIA, and the FHWA;
- environmental enforcement officials such as air pollution and ADEQ officials;
- the Regional Laboratory Supervisor; and
- any other technical personnel from ADOT.

The Resident Engineer is responsible for arranging the conference, inviting the participants, preparing the agenda, conducting the conference, and making a written record of the conference discussions. Copies of the written record should be distributed to the District Engineer, Assistant State Engineer–Construction, Field Reports, FHWA, Public Information Office, and the principal conference participants. A suggested preconstruction conference notification letter is shown in Exhibit 108.03-1. Exhibit 108.03-2 shows a suggested preconstruction conference agenda.

February 6, 2001

John A. Partner
Partnering Construction Co., Inc.
2222 E. Good Road, Suite D9
Anywhere, AZ 86018

RE: I-IR-40-301R /
H243801C I-40
Pavement Repair
Preconstruction
Conference

A Preconstruction Conference for this contract has been arranged for 1:00 p.m. on February 15, 2001 at the Flagstaff District Office located at 1801 S. Milton Road, Flagstaff, AZ 86001.

This contract specifies submittal of the following items at the Preconstruction Conference.

- Project Schedule (108.03),
- etc.

(Prepare a list of all the submittals required by the Contractor and cite the appropriate subsection in parentheses.)

The remainder of the meeting is outlined in the enclosed tentative agenda. We can modify it to include any other areas that you might feel are necessary.

Please invite your suppliers and Subcontractors to attend since their expertise may be of help at the meeting.

We would be glad to furnish any information that we can. Please feel free to contact me at 712-1111.

Sincerely,

Build A. Road
Resident Engineer
Enclosures: Authorized Signature form and others, as may be necessary Agenda

John Doe, District Engineer
Jane Doe, EEO/ Affirmative Action Office
John Smith, Affected Utility Company
Jane Smith, City of Flagstaff
etc.
(cc: all those you intend to invite to the conference by name and organization and send them a copy of this letter and the agenda.)

Exhibit 108.03-1. Preconstruction Notification Letter

Agenda

Arizona Department of Transportation
Preconstruction Conference
I-40 Pavement Repair Project
I-IR-40-301R / H243801C

02/15/01
1:00 PM to 2:02 PM
Flagstaff District Office
1801 S. Milton Road
Flagstaff, AZ 86001

Meeting called by:	Build A. Road, Resident Engineer
Note taker:	Anne Assistant
Please bring:	Contractor: Preconstruction Conference Submittals (See notification letter)

	Agenda topics	
1:00-1:05 PM	Contractor's Submittals	Superintendent
1:05-1:08 PM	Start Meeting and Introductions	Resident Engineer
1:08-1:09 PM	Sign-in Sheet and Meeting Minutes	Resident Engineer
1:09-1:11 PM	Emergency Contacts	Superintendent
1:11-1:18 PM	Review Contractor's Schedule	Superintendent
1:18-1:28 PM	Utility Coordination and Issues	Resident Engineer
1:28-1:31 PM	Traffic Control	Superintendent
1:31-1:41 PM	Local Government and Neighborhood Concerns	Resident Engineer
1:41-1:45 PM	Environmental Concerns	Resident Engineer
1:45-1:50 PM	Issues Unique to Project	Resident Engineer
1:50-1:53 PM	Contractor's Quality Control	Superintendent
1:53-1:58 PM	Contract Administration Concerns	Resident Engineer
1:58-2:01 PM	Plan and Specification Questions	Resident Engineer
2:01-2:02 PM	Adjourn	Resident Engineer

Special notes:	Contractor: Partnering Construction Co., Inc. Start Date: 3/3/01 Contract Time: 220 Working Days Completion Date: 2/22/02 Contract Amount: $4,993,999.00

Exhibit 108.03-2. Sample Agenda

The Resident Engineer is given much leeway on what to discuss at the preconstruction conference. There is no sense in repeating issues covered in the partnering conference unless it is for the benefit of those who did not attend. Current contract issues important to the District or ADOT should be brought up. In addition, any new contract specifications or provisions that require procedures unfamiliar to the Contractor should be discussed. As a minimum, every preconstruction conference should cover the following:

- review of the Contractor's schedule;
- emergency contacts;
- introduction of key project members;
- quality control efforts by the Contractor;
- utility coordination;
- plan and specifications clarification;
- traffic control issues;
- local government and neighborhood concerns;
- contract administration issues important to ADOT; and
- scheduling the weekly construction meetings.

The Resident Engineer should avoid covering boilerplate issues such as requirements for filing contract claims and inspection notifications. Try to stick to items unique to the project or unfamiliar contract provisions.

If a partnering workshop is not held, the following should be discussed during the preconstruction conference in addition to items previously mentioned.

- Any necessary clarification of plans and/or specifications with emphasis on the Special Provisions.
- A discussion of testing, workmanship, inspection policies, acceptance points for materials, sampling devices required, pit royalties, and material certifications.
- Designation of principal assistants for both the Contractor and the Resident Engineer, and the clarification of responsibilities and lines of authority.
- Contractor's project schedule.
- Work to be subcontracted.
- ADOT, Contractor, Subcontractor, and supplier relationships and responsibilities.
- Legal responsibilities, cooperation with utilities, property owners, other Contractors, other agencies involved, FHWA, communications with public through media.
- Unusual conditions.
- Right-of-way problems.
- Sources of aggregate materials, haul routes, protection of livestock, and other property rights of landowners.
- Detours, signing, flagging, and pilot cars.
- Employee and public safety, sanitary provisions, etc..
- Labor provisions, posters, bulletin board, project signs, Contractor and Subcontractor payrolls.
- Overload restrictions, oversize permits and licensing of out-of-state vehicles.
- Provisions for having weekly meetings to discuss project problems and schedules.

108.04 Prosecution and Progress

Asphaltic Concrete Mix Designs

Subsection 108.04 of the Special Provisions may require the Contractor to submit an AC Mix Design within 30 calendar days after the Notice of Award Letter.

Weekly Meetings

The Resident Engineer should conduct a weekly meeting with the Contractor. Topics discussed at the meeting should include:

1. the Contractor's 2-week look-ahead schedule;
2. project progress;
3. safety and traffic control;
4. the status of contract submittals, supplemental agreements, and other project documents;
5. project problems and new issues;
6. contract requirements and interpretations;
7. partnering issues and remedies;
8. local community relations and environmental concerns; and
9. inspection, testing, and survey.

The meeting should be held at the project site to encourage the attendance of both the Contractor's and the Department's field staff. However, the meetings can be held at the ADOT Field Office or a site close to the project when the project has inadequate meeting facilities.

Minutes of the meeting must be kept. The aim is not to tape record and transcribe each meeting— this is too extreme in a partnering environment. Instead, the idea is to summarize major discussions and document important commitments. The minutes should also track:

- the status of contract submittals and other documents,
- project progress,
- unresolved project issues, and • other unfinished business.

The Weekly Project Report

The minutes are usually kept in the weekly project report. A recommended sample is shown in Exhibit 108.04-1a, b & c. The weekly project report is a document that captures and tracks all of the current project issues. The intent is that the Resident Engineer, the Contractor's superintendent, and their support staff can go to one document to find key tracking information about:

- project progress,
- recently resolved and unresolved project issues,
- processing of contract submittals and other project documents, and
- project changes.

Arizona Department of Transportation
Weekly Project Report
April 25, 2001

I-8, Dateland to Aztec
IM-8-1(96) / H356501C
Contractor: Partnering Construction Co., Inc.

A. Weekly Meeting Attendees

B. Progress

Schedule: (See Contractor's 2-week schedule)

Controlling Items and Project Milestones	Start	Finish	Progress Update
Start Project Time	01/15/01		
Box Culvert Extensions	03/13/01	04/11/01	Finished 5 days late
Build Subgrade	04/12/01	004/29/01	Working this weekend to make up lost time
Pave EB Lanes	04/30/01	5/22/01	Laydown machine not available until May 7th
Finish Phase I		05/22/01	
Target Completion		02/28/01	
Project Time Completed		02/28/01	

Comments on Progress and Contractor's Schedule: Contractor still feels that Phase I can be completed on schedule, even though the project is at least five days behind schedule. Contractor has committed to working the next three Saturdays and overtime, if needed, to making up lost time.

Time: **Day 66** of 245 (26.94%) as of April 24, 2001, inclusive

Weekly Time Charges:

2001	Th.	Fr.	Sa.	Su.	Mo.	Tu.	We.	2001
April	18	19	20	21	22	23	24	April
	X	X			R	R	X	

Time Charged: **3 days**
Notes: Rain days on April 22nd and 23rd.

Exhibit 108.04-1a. Weekly Project Report

C. New Business

1.
2.

D. Miscellaneous Construction Problems and Solutions

1.
2.

E. Interpretation of Plans and Design Issues

1.
2.

F. Safety and Traffic Control

1.
2.

G. Items Due or Overdue By Contractor

1.
2.

H. Submittals Status

Description	Status	Where	When	Who	Comments

I. Items Due or Overdue By ADOT

1.
2.

J. Partnering Issues and Action Items

1.
2.

K. Unresolved Issues

1.
2.

Exhibit 108.04-1b. Weekly Project Report

L. Value Engineering Proposals

1.
2.

M. Minor Alterations

Description	Where	When	Who	Cost	Status
			Total	$	

N. Change Orders

Description	Where	When	Who	Cost	Status
			Total	$	

O. Force Accounts

Description	Where	When	Who	Cost	Status
			Total	$	

Any inaccuracies in this report should be brought to the attention of the Resident Engineer no later than one working day prior to the next weekly meeting. The Contractor has up to one week after receipt of this report to request any adjustments to the weekly time charges.

Exhibit 108.04-1c. Weekly Project Report

When used effectively, the weekly project report will allow no important contract issues to fall through the cracks. As project issues are raised or administrative requirements are carried out, they are documented on the report. Tracking of these items continues until some type of resolution is reached or an administrative process is completed (i.e., review of a shop drawing).

By including important weekly meeting discussions and issue resolutions, the weekly project report serves as a historical record of agreements and commitments made by both the Contractor and the Department. The weekly report updates the status of project time and progress, contract submittals, contract changes, and other routine contract administration procedures.

More routine procedures, such as force account transmittals and payroll submission, are usually tracked when problems or exceptions arise.

Much latitude is given to the Resident Engineer on how to set up and organize the weekly project report as long as these minimums are met.

1. A method for accurately documenting contract time.

2. Tracking of contract submittals and supplemental agreements.

3. Minutes of the weekly meeting including a list of attendees.

To ensure everyone gets the most use out of the report, it should be updated immediately after each weekly meeting and distributed to the Contractor, ADOT's Project Manager, and other important project stakeholders.

Since project time, contract submittals, and supplemental agreements are tracked by the project report, the report still needs to be updated and distributed weekly, even when there is no weekly meeting.

Conducting the Weekly Meeting and Other Construction Meetings

Introduction

The Resident Engineer or one of his or her assistants conducts the weekly construction meetings with the Contractor. Typical attendees include:

- the Project Supervisor and Lead Inspectors;
- the materials coordinator for the Field Office;
- the Contractor's superintendent, lead foreperson and assistants;
- any key Subcontractors;
- local government and utility representatives;
- ADOT's Project Manager; and
- a consultant or some other special guests.

The meeting size can range from 5 to 25 people.

Everyone is at the meeting for a different reason. Some want to hear about the Contractor's schedule, while others may have an issue they would like to raise with ADOT or the Contractor. For these meetings to be effective and good use of everyone's time, there needs to be a clear idea of:

1. what the meeting is trying to accomplish, and

2. who should be there to help in that accomplishment.

Know What Type of Meeting You're Having

There are basically two types of business meetings. The first type is called an *informational meeting*. The purpose of this meeting is to share information with others and collect different points of view about a topic.

For example, a review of the Contractor's two-week schedule is meant to inform everyone about what the Contractor intends to do on the project. Inspectors may ask questions about construction methods and discuss with the Contractor the contract requirements for the upcoming work. There is an exchange of information taking place, but most of it is one-way with the intent to inform.

Informational meetings are best run in a controlled manner so time is closely monitored and the agenda is followed rigidly. In this way, participants are not wasting their time on things they need not know about. Any number of people can attend an informational meeting. However, to get the most feedback for the information presented and to allow effective questioning and answering, the meeting size should be limited to 30 people.

The second type of business meeting is a *problem-solving meeting*. The purpose of this meeting is to analyze a situation, generate ideas, solve a problem, and make a decision.

For example, when the Contractor raises an issue about encountering an unexpected groundwater condition and needs the Department's help in resolving the situation; this is a topic requiring a problem-solving meeting.

This type of meeting is best run in an atmosphere in which people are encouraged to participate and the leader stimulates rather than controls the discussion. More importantly, the number of attendees must be limited to no more than 12 to give ample opportunity to express their ideas.

Two other important elements of problem-solving meetings are 1) have the right people at the meeting who can make substantial contributions in resolving the problem, and 2) eliminate any perceived outsiders so people can speak freely without the fear of being misunderstood.

Meeting Effectiveness

When problem-solving and informational type meetings are mixed together the result can be a meeting that is ineffective, burdensome, and frustrating for the participants. Some of ADOT's weekly construction meetings are like this, especially when the meeting size is large and there is a lot of material to cover. To make the weekly meetings more effective, here are a few suggestions.

Divide the meeting into two distinct phases.

1. An informational phase where:
    A. the Contractor's schedule is reviewed,
    B. contract submittals and supplemental agreements are updated, and

C. routine announcements and questions from outsiders are handled;

2. A problem-solving phase during which:
   A. construction problems are discussed,
   B. partnering issues are raised, and
   C. other project issues can be talked about and resolved.

If the meeting is too big, divide it into two distinct meetings:

1. an information meeting that everyone attends, and
2. a smaller problem-solving meeting attended by only the Resident Engineer, Project Supervisor(s), superintendent, foreperson, and a few invited guests.

If the problem-solving portion of the meeting takes too long, have a break so people not involved in the issues can leave, or end the weekly meeting and have a separate, smaller meeting just to solve the problems.

Partnering issues and other sensitive topics can be raised at weekly meetings but sometimes a smaller problem-solving meeting is best suited to resolve these kinds of issues.

The more formal the weekly meeting the less problem solving and open discussion that takes place.

Pre-Activity Meetings

When not required, pre-activity meetings are encouraged for all new activities/phasing changes. This meeting can be in conjunction with the weekly meeting.

Pre-activity meetings must be scheduled sufficiently in advance of ordering materials to resolve all issues (a minimum of 20 days is recommended). Attendees should include the superintendent, the subcontractor(s) as applicable, the foreman installing or performing the work, the RE, the Project Supervisor and Inspectors assigned to the work.

An agenda similar to the pre-activity meeting for guardrail (Exhibit 905-1) can be utilized. The RE should assign discussion roles and times. The Contractor should be requested to bring manufacturer's installation requirements, including manufacturer's drawings approved by ADOT to the meeting. If there are more recent standards approved by ADOT, the RE should encourage the Contractor to work to current approved standards (changes to Specifications require a Change Order). ADOT personnel will bring the current Quantlists to the meeting.

CPM Schedule Reviews

Objectives of CPM Scheduling

Projects over $5 million and some smaller specialized projects require the Contractor to submit a CPM schedule. The schedule is submitted at the beginning of the project and updated monthly throughout the life of the project. The requirement for the Contractor's CPM schedule can be found in Subsection 108.03 of the Special Provisions.

The intent of the CPM schedule is to get the Contractor to determine which construction activities are

critical to completing the project on time. These critical activities are called the *controlling items* for the project (see definitions in Subsection 101.2). Once the controlling items are identified, the Contractor's superintendent, the Resident Engineer, and other project team members can focus their management efforts on ensuring these items stay on track and are not unduly delayed.

The CPM schedule demonstrates that the Contractor has considered not only all the activities needed to complete the project in accordance with the contract, but the effect of each activity on project time and the Contractor's resources.

Reviewing the CPM Schedule

It is the Resident Engineer's responsibility to review and accept the schedule. Keep in mind that the CPM schedule is a planning tool. It predicts how work is going to be carried out in the future. As a project partner, you should be of great service to the Contractor during this planning stage. The intent of the Resident Engineer's review is primarily to look at the sequencing of the work to determine if the Contractor has considered:

- all the contract requirements, such as shop drawing reviews, traffic restrictions, access limitations, time constraints, etc.;
- any unusual site conditions;
- any regulatory impediments from local, county, state, or federal agencies;
- interface requirements with other Contractors;
- construction method limitations specifically described in the Project Plans and Special Provisions; and
- any other unusual contract constraints.

The Resident Engineer should review the schedule to see that activity durations appear realistic and that the logic makes sense. A good critique of the Contractor's schedule is a major contribution the Resident Engineer can make in helping the Contractor correctly execute the contract work.

Submittal and Review Deadlines

It is important for the Resident Engineer to insist that the Contractor submit the CPM schedule and the monthly updates within the time limits described. One reason is that schedules are time-sensitive documents, so information in a schedule starts becoming useless and outdated the longer the Contractor waits to submit.

A second reason for insisting on a schedule is that the Resident Engineer's insistence demonstrates that the Department is taking the project schedule and contract time seriously. It would be difficult to assess liquidated damages for a late completion if the Resident Engineer never insisted on or reviewed any of the Contractor's CPM schedules.

Finally, the CPM schedule determines the controlling items for the project ahead of time. This is very important for the Resident Engineer to know in advance so that the Department does nothing to unknowingly affect these items.

The following summarizes the submissions and review times for the Contractor's CPM schedule (all time

is in calendar days unless noted otherwise).

Schedule	Due	Review Time	Revision Time
Part I	at the Preconstruction meeting	15 days	10 days
Part II	15 days after Part I approval	15 days	10 days
Monthly Updates	10th working day of the month (usually between the 12th and 16th calendar day)	7 days (this is an ADOT administrative requirement)	10 days

Withholding Progress Payments

The Part I submittal is part of the preconstruction conference documents. This submittal demonstrates that the Contractor has put together a basic plan on how to execute the contract work. Withholding progress payments for an incomplete Part I submittal is based on the principle that the Contractor should clearly communicate a work plan to ADOT in advance of any work being done for which they expect payment on from the Department. A lot of detail is not required, but the overall plan should be complete and understandable.

The Part II plan demonstrates to the Department that the Contractor has planned the work in sufficient detail to carry out its execution without risking a major interruption or re-sequencing that would expose the project to unnecessary financial risk. Part II requires much more detail than Part I, including resource loading and reports.

Withholding progress payments for an incomplete Part II submittal is based on the fact that the project is well under way, and the Contractor has still not adequately planned the work to reduce or eliminate unnecessary risks to the project.

Withholding a portion of the monthly progress payment for tardy update submittals reflects the fact that CPM schedules are time-sensitive documents, and getting them late diminishes their value to the project and the Department.

Contractors may say that partnering is based on trust, so the Resident Engineer shouldn't worry about the CPM schedule requirements. They point out that if there is really trust between the two parties, then the Contractor should not have to continually demonstrate that he or she has adequately planned the work. Contractors may point out that the project work is not that complicated and does not require a CPM schedule as extensive as the one required in the Special Provisions.

In response to these concerns, it is important to understand that the CPM schedule requirements are not based on a lack of trust or faith in the Contractor's ability to carry out the contract work, but a belief that a team effort in planning and scheduling large or specialized projects is crucial for their success. The Department needs to have a work plan in highly sufficient detail and clarity so it can better understand:

1. the complexities of the work;

2. its roles on the project team; and

3. the impacts of the Department's actions (or a change condition) on the Contractor's progress.

Withholding of progress payments should never be a complete surprise to the Contractor. The Resident Engineer should always give the Contractor adequate warning and ample time to respond before withholding payment. A face-to-face meeting, followed up by a letter, is the best way to get your point across. Escalating through partnering is highly recommended.

Project Delays

A project schedule or CPM schedule gets the Contractor to identify ahead of time the controlling items for the project. This is crucial information in the administration of any project since the Department needs to know how any changes or changed conditions affect the Contractor's progress and work sequence.

Since delay claims can be the costliest of all contract claims, it is essential for the Department to have an updated and accurate project schedule that truly represents how the work will be prosecuted.

The Resident Engineer should require the Contractor to submit an updated project schedule whenever the Contractor deviates significantly from the accepted project schedule. This measure can prevent enormous frustration for the Department and the Contractor whenever both are attempting to adjust the contract due to a perceived change.

An up-to-date schedule allows the Resident Engineer to deal with lack of progress on the project. Resident Engineers sometimes feel powerless when a Contractor chronically falls behind schedule. The Contractor may seem indifferent to the Resident Engineer's efforts to keep the project moving, or may keep promising to get things going, but never delivers. If, in the Resident Engineer's judgment, there is a continual lag in the Contractor's progress and no apparent effort is being made to improve the rate of progress, the Resident Engineer must notify the Contractor in writing of the unsatisfactory progress.

In this notification the Resident Engineer should request that the Contractor submit a detailed work plan for improving the rate of progress and provide evidence (usually a resource-loaded schedule) of the ability to complete the project within the time limit specified or as subsequently amended. Copies of such notification and the Contractor's reply are to be sent to the District Engineer, the Project Manager and the Deputy State Engineer. Any further action on the part of the Resident Engineer should be on the advice of the District Engineer (also refer to Subsection 109.06 of this manual).

Staffing Plans

At the beginning of each project, the Resident Engineer is responsible for putting together a staffing plan showing the Inspectors, Surveyors, Material Testers, Office Personnel, and Management Staff needed for the project. Since the staffing plan must be based on the Contractor's schedule, the Resident Engineer has up to 10 days after the preconstruction conference to complete the plan and submit it to the District Engineer.

The Construction Manpower Procedures (CMP) Manual should be used by the Resident Engineer in preparing and revising any staffing plans. The staffing plans are done on computers using ADOT's Staffing Plan Program. The CMP Manual describes how to use the program.

It is important for the Resident Engineer to revise staffing plans when required by the CMP manual. Accurate staffing plans are crucial for ADOT to forecast its long-term human resource needs. When staffing plans are ignored or inaccurate, ADOT management can misallocate resources away from projects and Field Offices that actually need them. The staffing plans, while not seeming important to the Resident Engineer, are an important tool to ADOT management because they allow more efficient use of the Department's work force.

108.05 Limitation of Operations

This subsection reinforces much of the public safety and convenience issues raised in Subsection 107.08 and 104.04.

Often Contractors will work weekends, holidays, and evenings to stay on schedule or to optimize resource usage. Although Contractors are supposed to give 24 hours notice of weekend work, often times they do not. It has been the Department's policy to deny weekend work only when the work cannot be adequately inspected.
When work is performed at night, adequate lighting needs to be provided by the Contractor so that:

- work can be performed safely,
- the work can be adequately inspected, and
- traffic can move safely around the work.

OSHA Standard 1926.56 has minimum lighting standards for workers safety. However, the Resident Engineer has the right to ask for additional lighting above the minimum so Inspectors can adequately inspect the work. For example, equipping the Inspectors with flashlights is not good enough when large areas or large surfaces, such as concrete paving, need to be inspected.

If the work can be inspected and tested the following day without rushing the Inspectors, then work may be allowed to continue into the night as long as the OSHA standards are met.

108.07 Methods and Equipment

Whenever the Contractor desires to change a construction method or piece of equipment required by the Standard Specifications or Special Provisions, the Contractor should submit a proposal as described in Section 100 of this manual. If the Resident Engineer perceives a significant cost savings by allowing the change, then the Contractor should be asked to submit a value engineering proposal in accordance with Subsection 104.13.

Before approving the change, the Resident Engineer can ask the Contractor to perform a test section using the proposed methods or equipment to demonstrate satisfactory results.

108.08 Determination and Extension of Contract Time

Measuring Time

Time allowed for completion of the contract work will be specified in Subsection 108.08 of the Special Provision. One of the following methods will be specified for measuring time:

1. Number of calendar days

2. Number of working days

3. Fixed completion date

Time allowed for projects with a construction phase and a landscape establishment phase will be

specified separately.

Some projects may use innovative contracting methods such as A+B Bidding. A+B Bidding requires the Contractor to bid both Cost-Plus-Time. The low bidder is selected based on a combination of the contract bid items (A) and the time (B) needed to complete the project or a critical portion of the project. Contract bid items A and B are assigned a monetary value. Incentive/disincentive (I/D) provisions are used to insure early completion and discourage unbalanced bidding. The Resident Engineer should contact the Deputy State Engineer's office for current information and training before starting an A+B contract. Specifications and procedures for A+B and other innovative contracting methods are new and change often.

Stopping Time

Subsection 101.02 defines when time is charged to a project on a working day basis. The Resident Engineer may suspend project time when work on the controlling item(s) (Subsection 101.02) must stop for any of the following reasons.

- Adverse weather or seasonal conditions.
- A recognized differing site condition that meets the requirements of Subsection 104.02(B).
- Acts of God (described in Subsection 104.11).
- Labor strikes.
- A recognized nationwide shortage of raw materials or basic items.
- Government interventions.
- Unexpected utility conflicts.
- Archaeological finds.
- Unexpected hazardous materials.

The reason for suspending project time must be clearly stated in the weekly project reports and the weekly time reports. For all other types of changes that impact contract time, either the Contractor must file a request for extension of contract time, or the Resident Engineer can include additional contract time in a change order or force account. A completed Request for Extension of Contract Time form is shown in Exhibit 108.08-1, per Construction Bulletin 10-01.

Contract Time and Controlling Items

The Department stops or extends contract time based only on effects to the controlling items for the project (see Subsection 101.02 for a definition of controlling item). For example, suppose the controlling item for a project is the curing of a concrete box culvert, and let's say it rains on the project for the next three days. Even though the project may be shut down, no stopping of contract time is needed because the controlling item is unaffected by the rain.

Contractors may make time extension requests when non-controlling items are affected by changed conditions, directed changes, or other changes beyond the Contractor's control.

For example, let's say in the previous box culvert example, a non-controlling item such as prepare subgrade was delayed five days due to the rain. If the item had seven days of total float time before the rain began, then after the five-day delay, the item would still have two days of float. It is still a non-controlling item so no time extension is needed.

ARIZONA DEPARTMENT OF TRANSPORTATION

REQUEST FOR EXTENSION OF TIME

Project No. ER-YYU-0(19)A **TRACS No.** H123401C **Request No.** 1

Project Name Avenue 64E at Gila River Bridge **Contractor** Young and Younger Contracting, Inc.

Total Days Requested 60 **Working Days** [X] **Calendar Days** [ ] **Fixed Date** [ ] **Requested Amended Fixed Date** [ ]

The work has been impacted for the following **attached** reasons. Include a schedule (CPM if applicable) detailing the impact to the contract. **ALL ATTACHED JUSTIFICATION DOCUMENTS MUST SHOW TRACS NUMBER, REQUEST NUMBER AND CONTRACTOR.**

Compensatory Days Requested [ ] Non-Compensatory Days Requested 60

I. M. Young — Contractor Signature | President — Title | 2/28/11 — Date

I.M. Young — Contractor Printed Name

The days claimed and reasons thereof have been studied. If fewer days are recommended than claimed, attach explanation.

Compensatory Days Recommended [ ] Non-Compensatory Days Recommended 25

Senior Resident Engineer, PE — Sr./Resident Engineer | 3/8/11 — Date

NOTE:
This recommendation must be sent to the District Engineer for approval.

Compensatory Days Approved [ ] Non-Compensatory Days Approved 25

District Engineer, PE — District Engineer | 3/9/11 — Date

NOTE:
If additional comments are necessary, attach to this request.

I. M. Young — Contractor Concurrence Signature | President — Title | 3/11/11 — Date

I.M. Young — Contractor Concurrence Printed Name

IF THE CONTRACTOR DOES NOT AGREE THE ESCALATION PROCESS MUST BE FOLLOWED.

After a review of the facts,
an additional _____ Compensatory Days and _____ Non-Compensatory Days are approved.

Federal Highway Administration — Date

After signatures, a Change Order must be executed in accordance with Standard Specification 108.08.
The Request for Extension of Time and all documentation must be attached to completed Change Order.

Exhibit 108.08-1 Time Extension Request

Sometimes a non-controlling item becomes a controlling item. In this case, the Contractor may ask for a time extension due to uncontrollable past delays that consumed some of the float time.

In the previous example, a few days later, a key piece of equipment breakdowns while the Contractor is preparing the subgrade. The equipment will take at least a week to fix. The prepare subgrade item now becomes a controlling item because the remaining float time is gone. The project is now being delayed. The Contractor will then contend that if it hadn't rained, the float would still be available for fixing the equipment.

In this case, the Contractor is attempting to benefit exclusively from the use of float time. This is not fair to the Department since contract time does have a value, and neither party should have a monopoly over it. If the situation were reversed (the equipment breakdown occurred just before the rain) it would be just as unfair for the Department to contend that the rain would not have delayed the project had the Contractor properly maintained the equipment.

108.09 Failure to Complete the Work on Time

Liquidated Damages

Liquidated damages are assessed against the Contractor when the project work is not substantially complete (Subsection 105.19) within the allotted contract time. Liquidated damages are not a penalty, but a method for recovering some of the Department's costs and damages due to the additional time needed to complete the project.

The Department uses liquidated damages as a last resort. These damages should be the final result of a process during which the Resident Engineer has been communicating to the Contractor the ramifications of not finishing within the contract time available.

Liquidated damages should be no surprise to the Contractor. The Contractor should receive plenty of warning about what could happen if the project is allowed to fall behind schedule. There should be letters written and escalation meetings held long before project time runs out.

It is important for Contractors to receive a clear message from the Resident Engineer and the District Engineer about where the Department stands on assessing liquidated damages for each project. This message should not be received at the last minute when Contractors have lost the opportunity to adjust their operations to make up for lost time.

When liquidated damages are assessed, the District Engineer should write a letter notifying the Contractor of the assessment. The letter should come shortly after substantial completion is achieved or when all project time issues are resolved. The Resident Engineer needs to notify Field Reports in writing of any assessed liquidated damages before any retention is released. The Resident Engineer should attach a copy of the District Engineer's letter.

Constructive Acceleration

Resident Engineers should be very careful about how they communicate to the Contractor the requirements for getting the project work back on schedule. Resident Engineers should not tell the Contractor that the work has to be completed by a certain time or within a certain time period.

Some Contractors may misinterpret this as a request to accelerate the work and then bill the Department for the acceleration costs. Instead, the Resident Engineer should warn the Contractor about the consequences of not

finishing on time, then let the Contractor decide what to do. Contractors do have a right to finish late and incur liquidated damages as a result.